ZYMO RESEARCH

The Beauty of Science is to Make Things Simple

INSTRUCTION MANUAL

ZR Genomic DNA™-Tissue MiniPrep

Catalog Nos. **D3050 & D3051**

Highlights

- For high quality DNA purification from solid tissues (e.g., tailsnips, earpunches, adipose tissue, etc.), whole blood, plasma, serum, buffy coat, lymphocytes, cultured cells, buccal cells, FFPE tissues, semen, hair, and other biological sources.
- Combines Proteinase K digestion with innovative *Fast-Spin* column purification technology.
- Isolated DNA is ideal for PCR, endonuclease digestion, Southern blotting, bisulfite conversion/methylation detection, sequencing, genotyping, etc.

Contents

ZYMO RESEARCH CORP.

Phone: (949) 679-1190 ▪ Toll Free: (888) 882-9682 ▪ Fax: (949) 266-9452 ▪ info@zymoresearch.com ▪ www.zymoresearch.com

Satisfaction of all Zymo Research products is guaranteed. If you are not satisfied with this product please call 1-888-882-9682.

Product Contents

ZR Genomic DNA™-Tissue MiniPrep (Kit Size)	**D3050** (50 Preps.)	**D3051** (200 Preps.)	**Storage Temperature**
Proteinase K & Storage Buffer*	2 x 5 mg	2 x 20 mg	−20°C(after mixing)
2X Digestion Buffer**	5 ml	20 ml	Room Temp.
Genomic Lysis Buffer***	50 ml	2 x 100 ml	Room Temp.
DNA Pre-Wash Buffer**	15 ml	50 ml	Room Temp.
g-DNA Wash Buffer	50 ml	100 ml	Room Temp.
DNA Elution Buffer	10 ml	50 ml	Room Temp.
Zymo-Spin™ IIC Columns	50 columns	200 columns	Room Temp.
Collection Tubes	100 tubes	400 tubes	Room Temp.
Instruction Manual	1	1	-

Note **-** Integrity of kit components is guaranteed for up to one year from date of purchase. Reagents are routinely tested on a lot-to-lot basis to ensure they provide maximal performance and reliability.

* The Proteinase K is stable as shipped. Add 260 µl (1,040 µl for D3051) **Proteinase K Storage Buffer** to each **Proteinase K** tube prior to use. The final concentration of **Proteinase K** after the addition of **Proteinase K Storage Buffer** is ~20 mg/ml.

** The **2X Digestion Buffer** and **DNA Pre-Wash Buffer** may have formed a precipitate. If this is the case, incubate at 37°C to solubilize.

*** *Recommended*: Add beta-mercaptoethanol to 0.5%(v/v) i.e., 250 µl per 50 ml *or* 500 µl per 100 ml.

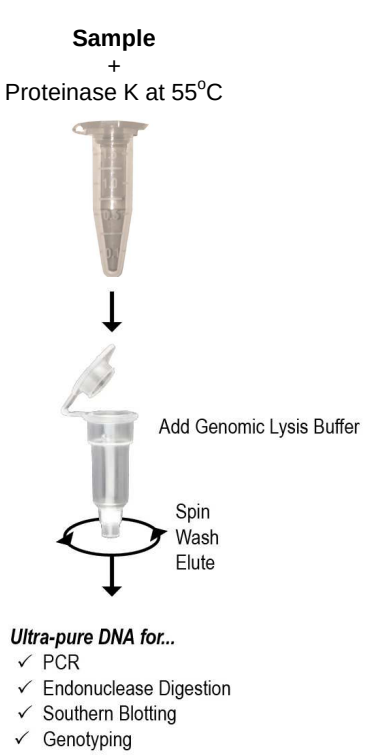
Specifications

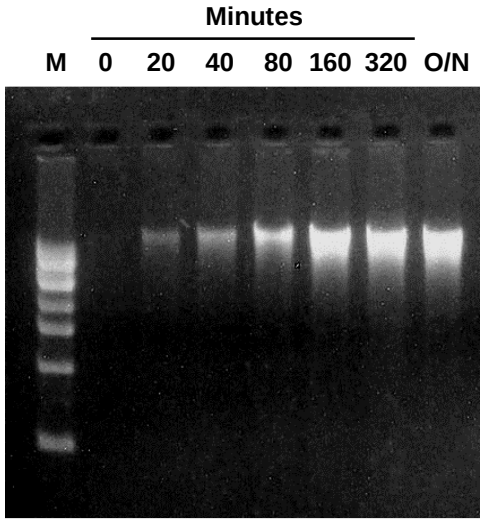
- **Sample Sources** – Solid tissues (e.g., tailsnips, earpunches, adipose tissue, etc.), whole blood, plasma, serum, buffy coat, lymphocytes, cultured cells, buccal cells, FFPE tissues, semen, hair, and other biological sources are effectively processed using this kit.
- **DNA Purity** – High quality DNA for PCR, endonuclease digestion, Southern blotting, bisulfite conversion/methylation detection, sequencing, genotyping, etc., is eluted with **DNA Elution Buffer** or water. (A_{260}/A_{280} ≥1.8)
- **DNA Size** – Capable of recovering genomic and mitochondrial DNA sized fragments from 100 bp to ≥40 kb. If present, parasitic, microbial, and viral DNA will also be recovered. Typical fragment sizes range from 25 kb-35 kb.
- **DNA Yield** – The DNA binding capacity of the column is 25 µg. Typically, mammalian tissues yield: 1-3 µg DNA per mg skeletal, heart, and brain tissues and 3-5 µg DNA per mg liver, kidney and lung tissues. Human whole blood will yield 3-7 µg DNA per 100 µl blood sampled. DNA is eluted into ≥30 µl **DNA Elution Buffer** or water**.**
- **Product Detergent Tolerance** – ≤5% Triton X-100, ≤5% Tween-20, ≤5% Sarkosyl, ≤0.1% SDS.
- **Equipment** – Water bath or heat block (55°C), microcentrifuge, and vortex.

Note - ™ Trademarks of Zymo Research Corporation. This product is for research use only and should only be used by trained professionals. It is not intended for use in diagnostic procedures. Some reagents included with this kit are irritants. Wear protective gloves and eye protection. Follow the safety guidelines and rules enacted by your research institution or facility.

Product Description

The **ZR Genomic DNA™-Tissue MiniPrep** is a simple procedure for the rapid isolation of total DNA (e.g., genomic, mitochondrial, parasitic, microbial, viral) from a variety of solid tissues. This product has been optimized for maximal recovery of ultra-pure DNA without RNA contamination and is also compatible with buffy coat, bone marrow, cells from culture, whole blood (fresh or stored), serum, plasma, and many biological liquid samples. For processing, simply digest the sample with the supplied **Proteinase K** then add the **Genomic Lysis Buffer**, vortex, and transfer the mixture to the supplied **Zymo-Spin™ Column**. PCR inhibitors are effectively removed during the purification process and purified DNA is suitable for downstream applications including: PCR, Southern blotting, DNA sequencing, endonuclease digestion, bisulfite conversion/methylation analysis, etc.





High yield/quality DNA is successfully isolated from porcine muscle using the **ZR Genomic DNA™-Tissue MiniPrep**. Equivalent amounts (25 mg) of muscle tissue were processed using the **ZR Genomic DNA™-Tissue MiniPrep** after incubation with Proteinase K at 55°C for the indicated times (in minutes) or overnight (O/N). Equal volumes of eluted DNA were then analyzed in a 0.8% (w/v) TAE/agarose/ethidium bromide gel. The size marker "M" is a 1 kb ladder (Zymo Research).

The **ZR-96 Genomic DNA™-Tissue MiniPrep** (D3055, D3056, D3057) provides high-throughput (i.e., 96-well plate) processing of solid tissue samples.

Zymo Research offers the following for rapid, precise DNA methylation detection…

1.) **EZ DNA Methylation™ Kit** (D5001, D5002, D5003)

2.) **EZ DNA Methylation-Gold™ Kit** (D5005, D5006, D5007, D5008)

3.) **EZ DNA Methylation-Direct™ Kit** (D5020, D5021, D5022, D5023)

Please visit: **www.zymoresearch.com** for a comprehensive list of genomic DNA purification products.

General Considerations When Purifying Genomic DNA

Zymo Research offers a range of genomic DNA isolation kits that are suitable for extracting high molecular weight DNA from a wide variety of sample types. Kits are tailor-made for specific applications and feature chemical, Proteinase K, and/or mechanical lysis technologies depending on the starting material (see table below).

DNA Extraction Method	Applications
Chemical	*Soft tissue samples* from humans, mice, etc., including: whole blood, plasma, serum, cells, buffy coat, buccal cells, biological liquids, crude homogenates, etc.
Proteinase K & Chemical	*Solid tissue samples* from humans, mice, etc., including: tailsnips, earpunches, hair*, feathers*, and FFPE* samples, as well as all of the above.
Mechanical Homogenization & Chemical	*Tough tissues and organisms* including: insects, arthropods, fungi, gram (+/-) bacteria, and microorganisms in soil, sludge, feces, or water, as well as most of the above.

The **ZR Genomic DNA™-Tissue MiniPrep** includes Proteinase K digestion and chemical lysis for the rapid, efficient purification of DNA (up to 25 µg/prep.) from soft and solid tissues, cells, and a range of biological liquids (see table below for sample types and protocol recommendations).

Recommended Protocol	Sample Types
Solid Tissue	*Solid tissue samples* from humans, mice, etc., including: tailsnips, earpunches, hair*, feathers*, and FFPE* samples. **(pg. 4)**
Whole Blood, Serum, and Plasma	Whole blood, plasma, and serum. **(pg. 5)**
Cell Monolayer	Monolayer cells (≤5 x10^6) from culture**. (pgs. 5-6)**
Biological Liquids and Cell Suspensions	Biological liquids including: semen, CSF, buffy coat, body fluids. Cell suspensions containing less than 5x10^6 cells (e.g., buffy coat, suspension cultured cells, etc.) **(pg. 7)**

* With protocol modification. See Alternative Protocols **(pg. 8.)**

Starting Material: The quality of the sampled material will affect both the yield and quality of the purified DNA. Freshly sampled tissues and cells yield the highest quantity/ quality DNA. If sampling from "stored" sources and/or if samples have been subject to repeated freeze/thawing, yields may decrease and the purified DNA may be degraded (e.g., FFPE).

The **ZR Soil Microbe DNA Kit™** (D6001), **ZR Fecal DNA Kit™** (D6010), and **ZR Plant/Seed DNA Kit™** (D6020) can be used for the purification of inhibitor-free DNA from soil, feces, and plants, respectively.

Removal of PCR Inhibitors: The **ZR Genomic DNA™-Tissue MiniPrep** has been designed for the efficient removal of PCR inhibitors during DNA purification from the samples listed in the tables above. However, some environmental samples including soil, plants, and manure (feces) will require alternative technologies (see sidebar) for the effective removal of polyphenolic PCR inhibitors.

Storage of Purified DNA: The eluted DNA can be used immediately for molecular-based applications or stored ≤-20ºC.

Reagent Preparation

- ✓ Add 260 µl (1,040 µl for D3051) **Proteinase K Storage Buffer** to each **Proteinase K** tube prior to use. The final concentration of **Proteinase K** after the addition of **Proteinase K Storage Buffer** is ~20 mg/ml.

- ✓ *Recommended*: Add beta-mercaptoethanol (user supplied) to the **Genomic Lysis Buffer** to a final dilution of 0.5%(v/v) i.e., 250 µl per 50 ml *or* 500 µl per 100 ml.

Protocols

Solid Tissue – Including: tailsnips, earpunches, biopsies, etc.

The following is for the purification of DNA from up to 25 mg fresh or frozen tissue. Typical yields are: 1-3 µg DNA per mg skeletal, heart, and brain tissues and 3-5 µg DNA per mg liver, kidney, and lung tissues. For hair, feathers and FFPE tissues follow **Alternative Protocols I** and **II** on page 8, respectively.

1. To a tissue sample (≤ 25 mg) in a microcentrifuge tube add a solution of...

H_2O	95 µl
2X Digestion Buffer	95 µl
Proteinase K	10 µl

2. Mix and then incubate the tube at 55°C for 1-3 hours.

   Note: If required (e.g., FFPE samples), digesting samples overnight at 55°C with Proteinase K is possible without affecting the integrity of the DNA.

3. Add 700 µl **Genomic Lysis Buffer** to the tube and mix thoroughly by vortexing. Centrifuge at 10,000 *x g* for one minute to remove insoluble debris.

4. Transfer the supernatant to a **Zymo-Spin™ IIC Column** in a **Collection Tube**. Centrifuge at 10,000 *x g* for one minute.

5. Add 200 µl of **DNA Pre-Wash Buffer** to the spin column in a new **Collection Tube**. Centrifuge at 10,000 *x g* for one minute.

6. Add 400 µl of **g-DNA Wash Buffer** to the spin column. Centrifuge at 10,000 *x g* for one minute.

7. Transfer the spin column to a clean microcentrifuge tube. Add ≥50 µl **DNA Elution Buffer** or water (e.g., add 200 µl if sampling 25 mg tissue) to the spin column. Incubate 2-5 minutes at room temperature, then centrifuge at top speed for 30 seconds to elute the DNA. The eluted DNA can be used immediately for molecular based applications or stored ≤-20ºC for future use.

For **Technical Assistance**, please contact 1-888-882-9682 or E-mail tech@zymoresearch.com.

Incubate 12-16 hours for formalin-fixed deparaffinized samples.

The column capacity is ~1 ml.

Elution of DNA from the column is dependent on pH and temperature. If water is used, ensure the pH is >6.0. Also, the total yield may be improved by eluting the DNA with Elution Buffer or water pre-equilibrated to 60-70°C or by performing and pooling sequential elutions.

Human whole blood should yield between 3-7 µg DNA per 100 µl.

Whole Blood, Serum and Plasma

The following is for the purification of DNA from up to 100 µl whole blood, serum or plasma (the volumes can be adjusted depending on your requirements). Fresh, frozen, or preserved blood (in EDTA, citrate, or heparin) can be used.

1. Adjust total volume of sample (blood, serum, or plasma) to 100 µl with water in a microcentrifuge tube and then add the following...

2X Digestion Buffer	95 µl
Proteinase K	5 µl

   Example: Add 40 µl H_2O to 60 µl blood, serum, or plasma prior to adding the 2X Digestion Buffer and Proteinase K.

2. Mix and then incubate the tube at 55°C for 20 minutes.

3. Add 700 µl **Genomic Lysis Buffer** to the tube and mix thoroughly by vortexing.

The column capacity is ~1 ml.

4. Transfer the mixture to a **Zymo-Spin™ IIC Column** in a **Collection Tube**. Centrifuge at 10,000 *x g* for one minute.

5. Add 200 µl of **DNA Pre-Wash Buffer** to the spin column in a new **Collection Tube**. Centrifuge at 10,000 *x g* for one minute.

6. Add 400 µl of **g-DNA Wash Buffer** to the spin column. Centrifuge at 10,000 *x g* for one minute.

Elution of DNA from the column is dependent on pH and temperature. If water is used, ensure the pH is >6.0. Also, the total yield may be improved by eluting the DNA with Elution Buffer or water pre-equilibrated to 60-70°C or by performing and pooling sequential elutions.

7. Transfer the spin column to a clean microcentrifuge tube. Add ≥50 µl **DNA Elution Buffer** or water (e.g., add 100 µl if sampling 100 µl blood, serum, or plasma) to the spin column. Incubate 2-5 minutes at room temperature, then centrifuge at top speed for 30 seconds to elute the DNA. The eluted DNA can be used immediately for molecular based applications or stored ≤-20ºC for future use.

Cell Monolayer

Generally, no more than $5x10^6$ cells should be sampled, for larger samples will exceed the binding capacity of the spin column.

The following procedure is designed for up to $5x10^6$ monolayer cells. Although cell types and culture conditions may vary, the protocol will work with high-density growth cells (e.g., HeLa cells) as well as with low-density growth cells (e.g., neuronal cells).

1. Trypsinize or scrape adherent cells from a culture flask or plate. Centrifuge the suspension at approximately 500 x *g* for 5 minutes. Remove the supernatant and resuspend the cell pellet in 1 ml PBS (Phosphate Buffered Saline) and then transfer suspension to a microcentrifuge tube. Centrifuge the suspension at approximately 500 x *g* for 5 minutes. Remove the supernatant and resuspend the pellet in a solution of…

H_2O	95 µl
2X Digestion Buffer	95 µl
Proteinase K	5 µl

(continued on next page)

2. Incubate the tube at 55°C for 20 minutes.

3. Add 700 µl **Genomic Lysis Buffer** to the tube and mix thoroughly by vortexing. Centrifuge at 10,000 *x g* for one minute to remove insoluble debris.

4. Transfer the supernatant to a **Zymo-Spin™ IIC Column** in a **Collection Tube**. Centrifuge at 10,000 *x g* for one minute.

The column capacity is ~1 ml.

5. Add 200 µl of **DNA Pre-Wash Buffer** to the spin column in a new **Collection Tube**. Centrifuge at 10,000 *x g* for one minute.

6. Add 400 µl of **g-DNA Wash Buffer** to the spin column. Centrifuge at 10,000 *x g* for one minute.

7. Transfer the spin column to a clean microcentrifuge tube. Add ≥50 µl **DNA Elution Buffer** or water (e.g., add 200 µl if sampling $5x10^6$ cells) to the spin column. Incubate 2-5 minutes at room temperature, then centrifuge at top speed for 30 seconds to elute the DNA. The eluted DNA can be used immediately for molecular based applications or stored ≤-20ºC for future use.

Elution of DNA from the column is dependent on pH and temperature. If water is used, ensure the pH is >6.0. Also, the total yield may be improved by eluting the DNA with Elution Buffer or water pre-equilibrated to 60-70°C or by performing and pooling sequential elutions.

Guidelines for Monolayer Cell DNA Isolation: Cell numbers (growth densities) can vary between different cell types. Table 1 (below) provides an approximation of the cell numbers that can be recovered from different culture containers for "high-density" growth cells like CV1 and HeLa cells.

Table 1: Culture Plate/Flask Growth Area (cm^2) and Cell Number

Culture Container	Well /Flask Surface Area	Cell Number
96-well plate	0.32-0.6 cm^2	$4\text{-}5x10^4$
24-well plate	2 cm^2	$1\text{-}3x10^5$
12-well plate	4 cm^2	$4\text{-}5x10^5$
6-well plate	9.5 cm^2	$0.5\text{-}1x10^6$
T25 Culture Flask	25 cm^2	$2\text{-}3x10^6$
T75 Culture Flask	75 cm^2	$0.6\text{-}1x10^7$
T175 Culture Flask	175 cm^2	$2\text{-}3x10^7$

Biological Liquids and Cell Suspensions

Cells should be processed directly from biological fluids or from suspension in PBS, TE, or compatible buffers.

The following protocol is designed for up to 100 µl of biological liquid sample including semen, CSF, buffy coat, body fluids, and cell suspensions containing less than $5x10^6$ cells.

1. Adjust total volume of liquid sample to 100 µl with water in a microcentrifuge tube and then add the following...

2X Digestion Buffer	95 µl
Proteinase K	5 µl

2. Mix and then incubate the tube at 55°C for 20 minutes.

3. Add 700 µl **Genomic Lysis Buffer** to the tube and mix thoroughly by vortexing.

The column capacity is ~1 ml.

4. Transfer the mixture to a **Zymo-Spin™ IIC Column** in a **Collection Tube**. Centrifuge at 10,000 *x g* for one minute.

5. Add 200 µl of **DNA Pre-Wash Buffer** to the spin column in a new **Collection Tube**. Centrifuge at 10,000 *x g* for one minute.

6. Add 400 µl of **g-DNA Wash Buffer** to the spin column. Centrifuge at 10,000 *x g* for one minute.

Elution of DNA from the column is dependent on pH and temperature. If water is used, ensure the pH is >6.0. Also, the total yield may be improved by eluting the DNA with Elution Buffer or water pre-equilibrated to 60-70°C or by performing and pooling sequential elutions.

7. Transfer the spin column to a clean microcentrifuge tube. Add ≥50 µl **DNA Elution Buffer** or water (e.g., add 200 µl if sampling liquids containing $5x10^6$ cells) to the spin column. Incubate 2-5 minutes at room temperature, then centrifuge at top speed for 30 seconds to elute the DNA. The eluted DNA can be used immediately for molecular based applications or stored ≤-20ºC for future use.

Alternative Protocols:

I.) For Hair, Feathers, or Related Samples: Freshly prepared DTT (dithiolthreitol) (not provided) needs to be added to Step 1 of the Solid Tissue Protocol (page 3) as follows…

H_2O	90 µl
2x Digestion Buffer	90 µl
DTT (1 M)	10 µl
Proteinase K	10 µl

Then follow with the rest of the procedure as indicated.

II.) For FFPE Samples: Tissues need to be deparaffinized prior to Step 1 of the Solid Tissue Protocol (page 4) by…

i. Removing (trimming) as much paraffin from the sample(s) as possible.
ii. Transfer samples to 1.5 ml microcentrifuge tubes. Add 750 µl xylene (not provided) to the samples.
iii. Vortex and incubate samples at room temperature for 1 hour with gentle rocking.
iv. Centrifuge for 1 minute at 10,000 *x g* and remove the xylene from the sample. Repeat steps 2-4.
v. Wash two times with 1 ml EtOH (100%) for 5 minutes with gentle rocking.
vi. Wash two times with 1 ml EtOH (95%) for 5 minutes with gentle rocking.
vii. Wash two times with 1 ml EtOH (75%) for 5 minutes with gentle rocking.
viii. Wash once with 1 ml ddH_2O for 5 minutes with gentle rocking. Remove as much water from the sample as possible
ix. Use sample or store at -80°C.

Note: For steps v-viii, add the wash, vortex briefly, and incubate for 5 minutes with gentle rocking. Remove wash from the sample after centrifugation at 10,000 *x g* for 1 minute.

Troubleshooting:

1. *DNA degradation*: Check for DNase contamination. All reagents and components supplied with the **ZR Genomic DNA™-Tissue MiniPrep** are DNase-free. However, DNase contamination can result during the processing of some samples. Check pipets, pipet tips, microcentrifuge tubes, etc., and exercise the appropriate precautions during the DNA purification procedure. Make sure Proteinase K digestions are performed at 55°C as indicated.

2. *DNA is not performing well in subsequent experiments*: Ensure the correct volume of **Genomic Lysis Buffer** has been added to the sample. Also, make sure all centrifugation steps are completed for the indicated times and speeds (rcfs). Failure to do so may result in incomplete washing, which may cause salts to be eluted with the DNA affecting quantitation and subsequent experiments including enzymatic processes like PCR.

3. *RNA contamination*: The buffers and spin columns provided in this kit are designed to efficiently remove RNA during the DNA purification procedure. However, additional RNA removal (e.g., digestion with RNase A) may be necessary for subsequent applications sensitive to trace amounts of RNA.

Ordering Information

Product Description	Catalog No.	Kit Size
ZR Genomic DNA™-Tissue MicroPrep	D3040 D3041	50 preps. 200 preps.
ZR Genomic DNA™-Tissue MiniPrep	D3050 D3051	50 preps. 200 preps.
ZR Genomic DNA™-Tissue MidiPrep	D3110	25 preps.
ZR-96 Genomic DNA™-Tissue MiniPrep	D3055 D3056 D3057	2x96 preps. 4x96 preps. 10x96 preps.

For Individual Sale	Catalog No.	Amount
Proteinase K & Storage Buffer	D3001-2-5 D3001-2-20	5 mg set 20 mg set
2X Digestion Buffer	D3050-1-5 D3050-1-20	5 ml 20 ml
Genomic Lysis Buffer	D3004-1-50 D3004-1-100	50 ml 100 ml
DNA Pre-Wash Buffer	D3004-5-15 D3004-5-30 D3004-5-50	15 ml 30 ml 50 ml
g-DNA Wash Buffer	D3004-2-50 D3004-2-100	50 ml 100 ml
DNA Elution Buffer	D3004-4-4 D3004-4-10 D3004-4-50	4 ml 10 ml 50 ml
Zymo-Spin™ IIC Columns	C1011-50 C1011-250	50 columns 250 columns
Collection Tubes	C1001-50 C1001-500 C1001-1000	50 tubes 500 tubes 1,000 tubes

THE Epigenetics COMPANY™

Popular Products From Zymo Research

Product	Description	Kit Size (Preps)	Catalog No. (Format)
	Fragment DNA Purification		
DNA Clean & Concentrator™-5	Clean and concentrate up to 5µg DNA into ≥6 µl elution volume in as little as 2 minutes with no wash residue carryover.	50 200 50 200	**D4003** (uncapped) **D4004** (uncapped) **D4013** (capped) **D4014** (capped)
DNA Clean & Concentrator™-25	Clean & concentrate 25 µg of DNA into ≥25 µl elution volume in as little as 2 minutes with no wash residue carryover.	50 200 50 200	**D4005** (uncapped) **D4006** (uncapped) **D4033** (capped) **D4034** (capped)
ZR-96 DNA Clean & Concentrator™-5	Quick (15 minute), high-output recovery of up to 5 µg pure DNA into 10-15 µl minimum elution volume allows for highly concentrated DNA.	2x96 4x96	**D4023** **D4024**
Genomic DNA Clean & Concentrator™	Quick (5 minute) clean-up of up to 10 µg high molecular weight DNA (≤200 kb) from any enzymatic reaction or impure preparation without precipitations.	25 100	**D4010** (capped) **D4011** (capped)
Zymoclean™ Gel DNA Recovery Kit	Purify DNA from high and low-melting agarose gels in minutes	50 200 50 200	**D4001** (uncapped) **D4002** (uncapped) **D4007** (capped) **D4008** (capped)
ZR-96 Zymoclean™ Gel DNA Recovery Kit	High-throughput DNA purification from high and low-melting agarose gels.	2x96 4x96	**D4021** **D4022**
Zymoclean™ Large Fragment DNA Recovery Kit	Purify high molecular weight DNA (≤200 kb) from high and low-melting agarose gels in minutes	25 100	**D4045** (capped) **D4046** (capped)
***OneStep*™ PCR Inhibitor Removal Kit**	Fast, one step procedure for removal of PCR inhibitors such as polyphenolics, humic/fulvic acids, melanin, etc. for successful PCR and other downstream applications.	50 2x96	**D6030** **D6035**
	Plasmid DNA Purification		
Zyppy™ Plasmid Miniprep Kit	Pellet-Free™ plasmid DNA purification in less than 10 minutes. Recover up to 25 µg DNA in as low as 30 µl.	50 100 400	**D4036** **D4019** **D4020**
Zyppy™-96 Plasmid Miniprep	The fastest and simplest high-throughput method for plasmid purification.	2x96 4x96 8x96	**D4041** **D4042** **D4043**
Zyppy™ Plasmid Midiprep Kit	Pellet-Free™ plasmid DNA purification in 15 minutes in a 150 µl minimum elution volume).	25 50	**D4025** **D4026**
ZR Plasmid MiniPrep™ Classic	Plasmid DNA purification in minutes: (alkaline lysis/spin column format for low 30 µl elution volume).	50 100 400	**D4036** **D4019** **D4020**
	Genomic DNA Purification		
***Quick-gDNA*™ MiniPrep**	Easy purification of genomic DNA from whole blood, plasma, serum, body fluids, buffy coat, lymphocytes, tissue, swabs or cultured cells in as little as 15 minutes without the use of Proteinase K or organic denaturants.	50 200 50 200	**D3006** (uncapped) **D3007** (uncapped) **D3024** (capped) **D3025** (capped)
ZR-96 *Quick-gDNA*™	Simple, high throughput (96-well) purification of DNA from whole blood, plasma, serum, body fluids, buffy coat, lymphocytes, tissue, swabs, or cultured cells in about 30 minutes.	2x96 4x96 10x96.	**D3010** **D3011** **D3012**
ZR-Genomic DNA™-Tissue MiniPrep	For high quality DNA purification from solid tissues (e.g., tail snips, ear punches, adipose tissue, etc.), body fluids, cultured cells, buccal cells, FFPE tissues, hair, and other biological sources using Proteinase K and Fast.	50 200	**D3050** **D3051**
Environmental DNA Purification Kits	Unique BashingBead™ technology allows isolation of DNA from samples refractory to conventional lysis procedures including tough-to-lyse tissues, soil samples, feces, plants, seeds, insects, bacteria, yeast, filamentous fungi, unicellular and filamentous algae, and protozoa		**Visit website for a comprehensive list**

Please visit our website to see our complete line-up of products.